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CENTRAL INTELLIGENCE AGENCY
INFORMATION REPORT

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COUNTRY East Germany

REPORT

SUBJECT Miscellaneous Information on the East
German Telecommunications Industry

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THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

1. Fernmelde-Anlagenbau, Berlin

- a. Organization: This establishment is situated at Berlin O17, Warschauer Platz 9-10, and until recently belonged to the V.V.B. Organization (Vereinigung Volkseigener Betriebe) with headquarters at Leipzig. This organization has, however, been dissolved and the various VEB's (Volkseigene Betriebe) are now directly responsible to their respective Government Ministries; in this case the Ministerium fuer Maschinenbau (Ministry for Machine Construction). As of 1 November 1953, the department for Transmission Equipment (Ueb) was divided into the following three sections:

- (1) U.S. - Uhren und Signal-Anlagen (clock and alarm equipment)
- (2) E.L.A. - Elektroakustik (electroacoustics)
- (3) W.V. - Weitverkehr (trunk transmission equipment).

Since 1 January 1954, Fernmelde-Anlagenbau Berlin has incorporated the former V.E.B. Funk-und Signalanlagen, and the organizational chart has, therefore, changed considerably. According to source, the organizational structure was never constant - it was continually being altered to fit the internal struggle for power, so that the extent of responsibility of the various departmental and sectional heads frequently increased or decreased.

- b. Functions of Fernmelde-Anlagenbau, Berlin: This establishment does not itself manufacture equipment, but is responsible for the assembly and wiring of equipment obtained from other factories, e.g. exchange selectors,

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switchboards, repeaters, into completed apparatus racks or bays for installation as complete exchanges or repeater stations or for extensions to existing installations. In many cases, they carry out the installation and testing work on site ready for handing over to the customer in operating condition. Projects in the following categories are undertaken for East Berlin and the whole of the Soviet zone:

- (1) Planning and construction of telephone trunk transmission systems for the Deutsche Post, the Seepolizei, and the Ministry of the Interior.
- (2) Design and construction of interpreters' installations for conferences. These have also been exported.
- (3) Construction of electroacoustic installations, e.g. public address systems for use in- and out-of-doors.
- (4) Design of trunk exchanges and local automatic exchanges. Construction and installation outside Berlin is carried out by local establishments of the same designation.
- (5) Additional projects following the incorporation of V.E.B. Funk- und Signalanlagen.

2. General Notes on the Telecommunications Industry in East Germany

- a. Developments since 1950: Following a ministerial decision to increase the facilities available for new subscribers in East Berlin, Exchange 20 on Franzoesischestrass was set up in 1951 for 3,000 subscribers. As no East German industry was at the time capable of undertaking such a contract, construction and installation was carried out by [redacted]

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[redacted]

In the meantime, this firm had already begun producing automatic exchange equipment [redacted] trunk switchboards type F36, and toll positions. The trunk switchboards were installed mostly in the Soviet Zone, in particular for the new trunk exchanges at Magdeburg and Leipzig. The toll positions, 50 in all, were used for the new toll exchange on Wilhelmstrasse, Berlin, at which exchange it is shortly intended to introduce dialling facilities over junctions. Manufacture of components for the 50-system, e.g. relays, condensers, resistors, etc., was begun, and in 1951 the first exchange was installed at the Soviet Embassy, Berlin, Unter den Linden. Development was facilitated by the availability at Arnstadt of a complete set of Siemens-Halske tools, although the selectors supplied for the Soviet Embassy project had subsequently to be changed. This project was followed by Wilhelmstrasse Exchange 22, equipped for 10,000 subscribers' lines. The exchange equipment constructed by the Arnstadt plant has so far given good service, without too many faults. VEB Fernmeldewerk Arnstadt, together with the former Graetz factory Berlin-Treptow, Elsenstrasse,¹ and TBN (Technisches Bureau fuer Nachrichtenmittel, formerly Knorrbremse)² has also produced several types of private automatic exchanges. Installations were supplied by the latter firm to the German Mission in Moscow, to China, Bulgaria, Hungary, and Czechoslovakia, but have all been so unsatisfactory that they have had to be changed.

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- b. Present conditions: The East German telecommunications industry, as of March 1954, is handicapped by the following:

- (1) Political influences. Many senior posts are of a political nature only and can only hinder production rather than assist it.

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- (2) Too much planning and too little execution.
- (3) Shortage of materials.

The warehouses belonging to VEB establishments are not permitted to hold materials for more than a two months' requirement. Supply bottlenecks are continuous. For instance, the procurement of such commonly required items as secondary cells, tag blocks, solder, switchboard cable, jumper wire, and fanning strips is a matter requiring endless negotiations and special measures, as a result of which installation works on site are continually being held up. In a completely unrealistic attempt to eliminate such setbacks, and probably in an attempt to hide the shortcomings of the organization from the public eye, a contract system has been introduced by which all suppliers of materials, components, etc., are bound by contract to meet fixed delivery dates. One installation order may thus necessitate contracts with as many as twenty suppliers. In addition, many items were formerly obtainable only from SAG concerns, with which no contract could be made and which would never quote a delivery date. Apart from the huge amount of ineffective clerical work involved, the main result of all this is that many helpless individuals are brought before the courts for failure to supply what is simply not obtainable.

c. Individual components:

- (1) The two-motion selector system 27 model 50 being manufactured, is similar to that produced in West Germany by DeTeWe³, Siemens-Halske, and Mix und Genest. As an economy measure, however, a number of switching functions have been transferred from relays to selector-operated contacts.
- (2) The uniselector in production is the Model 27, with 11, 17 or 50 outlets, the latter being used as a line finder. The Siemens-Halske type motor-driven uniselector is also used as a line finder, having been copied from those originally installed by Siemens as an experiment in the exchange at Eisenberg, Thuringia, which withstood the war. Minor improvements have been incorporated in the new selectors.
- (3) Replacement parts for selectors are in short supply.
- (4) Paper-insulated switchboard cable, for the interconnection of switchboards, selector racks etc., is manufactured by Kabelwerke Plauen Schoenau, and Berlin-Koepenick. It is often of poor quality and supply always lags behind demand, for the following reasons:
 - (a) Shortage of copper, paper, tinfoil, and insulating compounds. Aluminum is used to replace copper where possible.
 - (b) Insufficient machinery to enable several types to be manufactured concurrently.
 - (c) Cable already manufactured is often requisitioned, in spite of supply contracts, for reparations or export orders.
- (5) Sectional iron as required for rack construction, cable racking, etc. is also in short supply. Shortages result not only from insufficient raw materials but also from poor planning, in which the production of such items is often completely overlooked. The shortage of such commonly required items as nuts, bolts, and nails is also very serious.

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d. Development and Production of Transmission Equipment:

- (1) While the Arnstadt plant quickly became an efficient concern, development and production at RFT Fernmeldewerk Leipzig lagged behind. At first, the Leipzig factory produced C.B. (common battery) switchboards 10 + 100 and later the V12 carrier system, using materials available in East Germany. The equipment was built to a pattern originally developed by Werk HF (Berlin Oberschoeneweide). It took three years to produce the first sets and even then considerable difficulty was experienced in providing a reasonable service, because of the instability of the line amplifiers used with the system.
- (2) The radio and telecommunications equipment factories at Bautzen, Dabendorf, and Koelleda are also producing carrier and audio-frequency transmission equipment.
- (a) VEB Funkwerk Dabendorf has also produced a V12 system, copied largely from the Lorenz system. Unlike the Leipzig product, which is designed for rack mounting, the Dabendorf equipment is installed in cabinets and constructed of the best materials available. [redacted] It is intended for delivery to the USSR. 25X1
- (b) VEB Fernmeldewerk Bautzen (formerly an AEG⁵ warehouse) is manufacturing equipment for the ME8 system, using parts which were stored there in considerable quantities by AEG during the war. This equipment has been supplied to the East German Postal Ministry, the Seepolizei, and, in very large quantities, to the USSR.
- (c) VEB Funkwerk Koelleda has taken over production of the universal repeater (Allverstaerker) developed originally by AEG. Deliveries are to the Postal Ministry and for mobile repeater stations constructed for Poland. (See paragraph 3 below.) Although delays have occurred in production because of the above described material shortages, this equipment has proved successful in use.

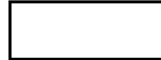
3. Principal Projects [redacted] 25X1

- a. Completion of Nordkabel Schema (Berlin-Stralsund Carrier Cables) 1953.⁶
- b. Completion of Suedstrecke (Berlin-Leipzig carrier system) 1953. See paragraph 12 below.
- c. Installation of 22-Exchange, Berlin, Wilhelmstrasse 66. Equipped for 10,000 lines. Completed 1952.
- d. Installation of 43-Exchange, Berlin-Pankow, Berlinerstrasse 12. Equipped for 9,000 lines. 1952-1953.
- e. Installation of 53-Exchange, Berlin, Palisadenstrasse 90. Equipped for 6,000 lines. 1952-1953.
- f. Installation of 53-Exchange, Berlin, Boxhagenerstrasse 111. Equipped for 5,000 lines, completed 1953.
- g. Installation of 641-Exchange, Berlin-Adlershof, Roonstrasse 1. Equipped for 2,000 lines, completed 1953.
- h. Installation of 646-Exchange, Berlin-Friedrichshagen, Friedrichstrasse 69a. Equipped for 4,000 lines, completed 1953.

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- i. Extension of 63/64 Exchange, Berlin-Niederschöneweide, Fernstrasse 9-11, from 4,000 to 8,000 lines capacity. Completed 1953. An additional 500-pair junction cable is being laid from this exchange to Lichtenberg.
- j. Extension of 20-Exchange, Berlin, Franzoesische Strasse 33c, from 3,000 to 4,200 lines capacity. Completed 1953.
- k. Installation of Staaken exchange. Equipped for 1,000 lines. It has subsequently been decided to dismantle this exchange.
- l. Installation of 649-Exchange, Wilhelmshagen, Fuerstenwalder Allee 1082-4. Equipped for 1,000 lines. Completed end of 1952.
- m. Installation of 638-Exchange, Berlin-Gruenau, Wassersport Allee 24. Equipped for 2,200 lines. Completed 1953.
- n. Installation of 44-Exchange, Bernauer Strasse. Equipped for 5,000 lines. Completed 1953.
- o. Installation of Strausberg Exchange. Equipped for 400 (sic) lines, 1950-51.
- p. Installation of Schnellamt (toll exchange), Berlin, Wilhelmstrasse. Equipped with 60 positions. 1951-1952.
- q. Installation of 20 private automatic branch exchanges of capacities from 200-300 extensions for various authorities and commercial concerns. 1951-1953.
- r. Complete installation of telephones, clocks, alarms, etc. at the television bureau at Adlershof, 1953-1954.
- s. Equipment of new buildings in Stalin Allee with private automatic branch exchanges, bells, door-openers, etc., 1953.
- t. Complete equipment for the Soviet Embassy extension building, Unter den Linden, with telephones, bells, illuminated indicators, fire alarms, etc. Completed 1954. Equipment for the first phase of this building was also installed by Fernmelde-Anlagenbau, Berlin. The telephone installation consists of a 200-line P.A.B.X. (private automatic branch exchange), serving both the Embassy and the Trade Mission. Outgoing calls from the Trade Mission are routed through an operator, but the Embassy has the facility of direct dialling into the public network. All incoming calls are routed through an operator. 25X1
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- u. Complete equipment for the new Broadcasting House (opposite the Klingenberg Power Station) with telephones, clocks, fire alarms, etc. Assistance was also given with the broadcasting installations. Completed 1953.
- v. Installation work at various repeater stations in East Germany, such as Leipzig and Erfurt.
- w. Installation of private automatic branch exchange for 400 lines at the Ministry of the Interior, Fernstrasse. 1953-1954.

4. Berlin-Wilhelmstrasse and Berlin-Lichtenberg Projects

a. Present functions of Wilhelmstrasse: (March 1954)

- (1) Schnellamt (no-delay exchange) giving "on demand" connection to various exchanges in East Germany.
- (2) Intermediate carrier repeater station on the Berlin-Stralsund route.
- (3) Automatic exchange 22 (See paragraph 3 (c) above.).

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b. Present functions at Lichtenberg:

- (1) German trunk exchange
- (2) German repeater station
- (3) Soviet trunk exchange
- (4) Soviet repeater station
- (5) Automatic exchange 55/59.

c. Alterations planned or begun:

- (1) A considerable extension to the Wilhelmstrasse building was planned, with the intention of replacing the Lichtenberg German trunk exchange by a new 200-position exchange at Wilhelmstrasse. Building operations proceeded as far as the ground level, when they were stopped coincident with the beginning of the Four-Power Conference. The same plan included transfer of the Lichtenberg Soviet Trunk Exchange to Karlshorst, but this has likewise been shelved.
- (2) By removal of voice frequency telegraph equipment at Lichtenberg to a neighboring building, it is now intended to make room for extension of the German trunk exchange. The Soviet exchange will remain where it is for the present.

5. Nordkabel Schema (Berlin-Stralsund carrier route)

- a. The original plan to terminate the cables from Stralsund at or near Schildow and extend the carrier systems into Berlin over unloaded pairs in existing junction (Bezirk) (Bzk) cables was not carried out.⁷
- b. Each circuit was equipped with two ME3 systems, giving up to 16 channels; these were to be replaced by V12 systems. Up to the date of this report, however, the ME3 was still being used.
- c. Each terminal consists of two ME3 sets connected in tandem for 4-wire operation; transmitting and receiving signals travel over separate cables in such a way that the whole frequency range between 6 and 60 kcs is available for both transmitting and receiving. Hence, it is possible to work up to 16 channels per system.
- d. The following terms are used:
 - Z8 - 8-channel operation over one pair
 - V16 - 16-channel operation over two pairs
 - V3 - 3-channel operation over two pairs, making it possible to insert intermediate repeaters
 - TI278 - (probably should read DI-Dienstleitung) - audio frequency engineering control circuit which is routed over a phantom.
- e. Both the Berlin-Stralsund and the Suedstrecke routes employ V12 intermediate repeaters.

6. Direktions-Fernsprechanlage

(Telephone installation for senior officials). This equipment is manufactured by the Technisches Buero fuer Nachrichtenmittel, Berlin O112, Neue Bahnhofstrasse 9/10. High functionaries of the SED in Berlin have had this equipment installed in their offices.

7. Wismut A.G. Communications.

By order of the Russians, a new unloaded cable was laid and completed at the end of 1952 between the Wismut A.G. exchange at Siegmars-Schoenau and Chemnitz repeater station. An MGL5 carrier system has been set up between the Leipzig

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repeater station and Siegmars-Schoenau, the system being routed via a Postal Ministry cable (number unknown by source, but presumably FK49) between Leipzig and Chemnitz and the new cable from Chemnitz to Siegmars-Schoenau. Postal Ministry technicians maintain the Leipzig terminal; the system is operated 4-wire.

8. Mobile Repeater Stations supplied to Poland

- a. A total of 31 vehicles have been equipped by Fernmelde-Anlagenbau Berlin with repeater and power equipment and supplied to the Polish Post Office through D.I.A. (Deutscher Innen-und Ausserhandel) for the use of the Polish Army. Acceptance tests were carried out by the Polish Post Office, which will also be responsible for their maintenance.
- b. Delivery was carried out in four phases, beginning at the end of 1952, as follows:
 - (1) Two sets of two audio frequency repeater vehicles + one diesel vehicle = 6
 - (2) Three sets of two audio frequency repeater vehicles + one diesel vehicle = 9
 - (3) Five sets of two audio frequency repeater vehicles + one diesel = 15
 - (4) One sample vehicle equipped with carrier apparatus.
- c. Audio Frequency Vehicles: Each mobile repeater station consists of two four-wheeled trailers identically equipped and one power trailer consisting of a 15 KVA diesel engine-driven generator mounted on two wheels. Current is generated at 220/380 volts. The trailers are fitted with double wheels, front and rear, and are specially constructed for movement over rough ground. They have a carrying capacity of 3.2 German tons each and were built by VEB Lwa Waggonbau Werdau. The repeaters are of the Allverserker II type (universal repeaters), suitable for either two- or four-wire working. A drum of cable for connection to an exchange is included with each repeater trailer and all equipment is mains-operated. The repeater equipment was manufactured by VEB Funkwerk Koellada. So far as was known, tractors for these vehicles were not supplied by a German manufacturer.
- d. Carrier Vehicle: These vehicles are equipped with two ME8 sets capable of operating 16 channels over a four-wire circuit. Power is obtained from a diesel-engine-driven generator housed in the same vehicle, but which is brought out when required for operation.

9. Developments in automatic telephony

- a. It is intended to install a 1,000-line automatic exchange with motor-driven selectors at Erkner, near Berlin.
- b. V.F. (voice frequency) dialling is to be employed on trunk circuits.
10. B.A.S.A. (Bahnselbstanschluss-Anlage) system. A new exchange in the Markgrafendamm, near Berlin-Ostkreuz station, is due for completion in March 1954.
11. East German Mission in Moscow. Fernmelde-Anlagenbau Berlin is installing a 100-line private automatic exchange in the Mission headquarters.
12. Carrier Telephony Systems for the Public Service.
 - a. Berlin-Leipzig (Suedstrecke). These systems were set up and completed at the end of 1952 in conjunction with the planned transfer of the East German government from Berlin to Leipzig, which so far has not materialized. Two systems are in operation, each consisting of two ME8 sets in tandem, giving 16 channels per system, together with VL2 amplifiers at intermediate repeater stations. Transmission is over de-loaded pairs in various trunk cables. The terminals are at the Berlin-Lichtenberg and Leipzig repeater stations and the intermediate repeater stations are as follows:

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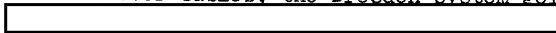
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- (1) Gross-Beeren carrier repeater station. This is an existing station situated on the route of Fk150, 151 and 153.
- (2) Michendorf. Equipment installed in the top story of the post office.
- (3) Treuenbrietzen. Existing repeater station.
- (4) Eutzsch. Equipment installed in a farmhouse. The repeater station consists of two rooms, one for the repeater equipment and the other for the batteries. It is planned to install a diesel-engine-driven generator in an outbuilding as reserve against mains failure.
- (5) Bitterfeld. Existing repeater station.

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- b. Leipzig-Dresden and Leipzig-Erfurt. As soon as Leipzig became the sole East German switching center for interzonal calls, carrier systems MG15 were set up during 1952-1953 over these routes in order to relieve congestion. The systems are routed over cables, the Dresden system going via Wurzen and Oschatz.  these would appear to be FK18 and FK11.

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1. [] Comment: As of 1 January 1954, VEB Werk fuer Signal-und Sicherungswesen (EAW) was listed at Berlin-Treptow, Elsenstrasse 90-96. 25X1
2. [] Comment: Currently called VEB Wissenschaftlich-Technisches Buero fuer Geraetebau (WTBG); prior to January 1954, this plant was called NTB-3 of SAG Kabel. It is at Berlin-Lichtenberg, Neue Bahnhofstrasse 9-11. 25X1
3. [] Comment: Deutsche Telephonwerke und Kabelindustrie AG. 25X1
4. [] Comment: Quantities and the state of production are not known. 25X1
5. [] Comment: Allgemeine-Elektricitäts-Gesellschaft.

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